## INTERNATIONAL SEARCH REPORT

International application No.

A. CLASSIFICATION OF SUBJECT MATTER Int.Cl			PC	T/JP2004/012093		
According to International Patent Classification (IFC) or to both national classification and IFC  ### FIELDS SEARCHED  Minimum documentation searched (classification system followed by classification symbols)  Int.Cl* B22D17/22, B22C9/06  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Jitsuyo Shinan Koho 1922–1936 Toroku Jitsuyo Shinan Koho 1934–2004  Folkal Jitsuyo Shinan Koho 1937–2004 Jitsuyo Shinan Toroku Koho 1936–2004  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  C. DOCUMENTS CONSIDERED TO BE RELEVANT  Calegory* Clation of document, with indication, where appropriate, of the relevant passages Relevant to claim No.  X JP 10-244351 A (Toshiba Machine Co., Ltd.), 3  Claims; Par. No. [0005]; Figs. 4, 5  (Family: none)  A JP 07-290221 A (Honda Motor Co., Ltd.), 3  JP 10-244351 A (Honda Motor Co., Ltd.), 1, 2  Claims; Fig. 1 (Family: none)  A JP 2003-010957 A (Uba Industries, Ltd.), 1, 2  Claims; Fig. 1 (Family: none)  Further documents are listed in the continuation of Box C. See patent family annox.  **Special categories of cited documents: "" document which may throw doubts on priority claim() or which is topic of the continuation of the conti						
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A. 発明の属	A 祭用の屋子を入取の入籍(屋際株計入等(LDO))				
A. 発明の属する分野の分類(国際特許分類(IPC)) Int. Cl <sup>7</sup> B22D17/22, B22C9/06					
B. 調査を行った分野 調査を行った最小限資料 (国際特許分類 (IPC))					
Int. Cl <sup>7</sup> B22D17/22, B22C9/06					
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	日本国実用新案公報				
	日本国公開実用新案公報 日本国登録実用新案公報				
国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)					
C. 関連すると認められる文献					
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カテゴリー*	THE PERSON NAMED IN THE PERSON NAMED IN CO.		請求の範囲の番号		
X	JP 10-244351 A (東芝機械株式会社)		3		
	【特許請求の範囲】, 【0005】, (ファミリーなし)	【凶4】,【凶5】			
	(2)				
A	   JP 07-290221 A(本田技研工業株式会	1, 2			
	【特許請求の範囲】、【図1】(ファ	1, 4			
A	JP 2003-010957 A (宇部興産機械株式	式会社)2003.01.15	1,2		
	【特許請求の範囲】,【図1】(ファ	,			
□ C欄の続きにも文献が列挙されている。 □ パテントファミリーに関する別		紙を参照。			
* 引用文献のカテゴリー の日の後に公表された文献					
「A」特に関連のある文献ではなく、一般的技術水準を示す 「T」国際出願日又は優先日後に公表			された文献であって		
もの 出願と矛盾するものではなく、発   「E」国際出願日前の出願または特許であるが、国際出願日 の理解のために引用するもの			発明の原理又は理論		
以後に	公表されたもの	の理解のために引用するもの「X」特に関連のある文献であって、	当該文献のみで発明		
	主張に疑義を提起する文献又は他の文献の発行	の新規性又は進歩性がないと考え	<b>さられるもの</b>		
日若しくは他の特別な理由を確立するために引用する 「Y」特に関連のある文献であって、 文献(理由を付す) 上の文献との、当業者にとって1			当該文献と他の1以		
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国際調査を完了した日 26.11.2004		国際調査報告の発送日 14.	12.2004		
国際調査機関の名称及びあて先   日本国特許庁 (ISA/JP)		特許庁審査官(権限のある職員)	4E 3232		
	<b>郵付計</b>	大畑・通隆			
東京都千代田区霞が関三丁目4番3号		電話番号 03-3581-1101	内線 3423		